

## **REMARKS/ARGUMENTS**

### **1.) Claim Rejections – 35 U.S.C. § 102**

The Examiner rejected claims 1, 2, 9-14, 19-23, and 26-28 under 35 U.S.C. § 102(e) as being anticipated by Papasakellariou (US 6,700,919). Applicants respectfully traverse the rejection. Independent claims 1, 11 (as amended), 13, 21 (as amended), 23, and 28 each provide for determining an initial channel estimate *from the training symbols* that are received over the channel. As noted in these claims, as distinguished from Papasakellariou, the present invention only uses the received signal samples obtained *over the training sequence* (but not the received signal obtained over information data) during both the initial stage, and the subsequent stage of adding a bias to the initial channel estimate. The key idea of the present invention is to exploit the fact that in some situations (such as joint-estimation of channels of multiple users or joint DC-offset and channel estimation), the training sequence in use is often not ideal. In these cases, it is better to use knowledge about the training sequence to some weight portion of the initial channel estimate higher than other portions, and hence create a bias. In other words, the key idea of the present invention is to exploit the known deficiency existing in the selected training sequence(s) to improve the initial channel estimate by adding a bias to it. Hence the present invention is distinguishable from Papasakellariou, as the "side information" for channel estimation improvement of the present invention comes from the knowledge of the training sequence, instead of the received signal over information data as is done in Papasakellariou. Hence, Papasakellariou fails to disclose all of the elements of the present invention as claimed, directly or indirectly, in claims 1, 2, 9-14, 19-23, and 26-28.

### **2.) Claim Rejections – 35 U.S.C. § 103(a)**

The Examiner rejected claims 3-8, 15-18, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Papasakellariou in view of Magee (US 2003/0076904). Applicant respectfully traverses the rejection. The Examiner stated that,

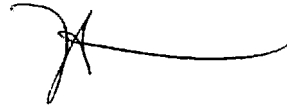
“Papasakellariou teaches all subject matter claimed except for teaching the steps of transforming”, while “Magee teaches from the same field of endeavor as shown in figures 9-11, a method and apparatus for calculating the scaled channel estimate by transforming....” “Therefore, it would have been obvious to modify the receiver of Papasakellariou by employing the teaching of Magee since it is just an alternative way of calculating the channel estimate.” As noted above, the present invention is distinguishable from Papasakellariou as the present invention only uses the received signal samples obtained over the training sequence (but not the received signal obtained over information data) during both the initial stage, and the subsequent stage of adding a bias to the initial channel estimate. Further, because of this key feature of the present invention, the transformation and the inverse transformation is dependent on the training sequence(s) in use, unlike in Magee where a fixed well-known transformation, namely FFT, is used. Hence, the combination of Papasakellariou and Magee fail to disclose the present invention as claimed in claims 3-8, 15-18, 24 and 25.

## CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-28.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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